Claims

1. Quick-change arbor (12) for a hole-saw comprising a body at one end provided with a drive shaft (11) for insertion in a drill chuck, and an opposite end, the body being provided with means for attaching a hole-saw, **characterised in that** the body (6) has a longitudinal over its full length mainly constant shape, such that a hole-saw can be slid along the full length of the longitudinal body, whereby said body (6) is provided with first and second means to fix the hole-saw at least close to said second end of the body (6) rotationally respectively axially, whereby at least the second means are operable in such a manner that they can be moved from a hole-saw axially locking position into a hole-saw axially unlocking position, to allow for the sliding of a hole-saw over the body of the quick-change arbor.

2. Quick-change arbor according to claim 1, **characterised in that** the body (6) of the quick-change arbor (12) is provided with a longitudinal groove over almost its entire length and that the said first and second means consist of a latch (7) which is mounted in said groove radially elastic to the outside and that said latch is provided with a notch (8).

3. Quick-change arbor according to claim 2, **characterised in that** the latch (7) is rotatably mounted in the groove around an axis (10) in the groove near the first end of the longitudinal body of the quick-change arbor, and is urged radially to the outside by an elastic element (15).

4. Quick-change arbor according to claim 2, **characterised in that** the latch (7) consists of an elastic element which is mounted in the groove of the body of the quick-change arbor.

5. Quick-change arbor according to one of the claims 2-4, **characterised in that** the end of the latch (7) is bevelled (8a, 8b) on either side of the notch (8).

6. Quick-change arbor according to one of the claims 2-5, **characterised in that** the underside of the latch (7) is fully or partially bevelled (7a).

7. Quick-change arbor according to one of the claims 2-6, **characterised in that** the latch (7) is mounted in the groove in the longitudinal body of the quick-change arbor in such a manner that it countersinks fully in the longitudinal body (6) of the quick-change arbor under influence of a radial axis-directed force, and without such a force exerted on the latch, at least around the notch (8), projects from said groove for the axial locking of a hole-saw in use placed on the quick-change arbor (12).

8. Quick-change arbor according to one of the preceding claims **characterised in that** the longitudinal body (6) of the quick-change arbor is provided with stop means (9, 9a, 9b) which limit the sliding motion of a hole-saw over the longitudinal body of the quick-change arbor towards the drive shaft.

9. Quick-change arbor according to the preceding claim, **characterised in that** the stopping mechanism is formed by a clamping ring, preferably a retaining ring or an e-clip, applied in a groove near the first end of the longitudinal body (6) of the quick-change arbour.

10. Hole-saw for use with a quick-change arbor according to one of the preceding claims consisting of a mainly cylindrical cup-shaped body provided with a longitudinal cylindrical body (1a) and a cup base (1b) **characterised in that** the cup base (1b) is provided with a central hole corresponding with the shape of the body (6) of the quick-change arbor, so that it can be fittingly slid over the quick-change arbor, whereby a flange (2) of which the inner shape corresponds with the central through-hole in the cup base (1b), is centrally mounted on or through the cup base.

11. Hole-saw according to preceding claim **characterised in that** the shape of the central hole and the inner shape of the flange (2) are round, semi-circular, triangular, square, pentagonal, or hexagonal.

12. Hole-saw according to one of the claims 10 or 11 **characterised in that** the flange at the inside, perpendicular to the cup base (1b), over the whole length is provided with a groove (13).

13. Hole-saw according to the preceding claim **characterised in that** the cup base (1b) at the location of the groove (3) is provided with a notch, suitable to cooperate with means on the quick-change arbor in order to fix the hole-saw against movement.

14. Adapter for a hole-saw **characterised in that** this consists of a collar shaped body (21) of which the inner diameter and shape correspond with the shape of a longitudinal body of a quick-change arbor, and wherein two holes (22) are diametrically applied for connection on the cup base of a hole-saw.

15. Adapter according to the preceding claim **characterised in that** the inner shape of the collar shaped body (21) is round or hexagonal, and/or that the cross section of the collar shaped body is L-shaped, and/or that at the inside of the collar shaped body (21) parallel to the middle axis a groove is applied over the whole thickness of the collar shaped body.

16. Hole-saw provided with an adapter according to one of the claims 14-15 which is mounted at the inside or at the outside of the cup base (1b).

17. Combination of a quick-change arbor according to one of the claims 1-9 and a hole-saw according to one of the claims 10-13 or according to the preceding claim.

18. Tool-change arbor system comprising a tool (13), and an arbor (12) having a rotatably drivable end (11) and a tool end, **characterised in that** the tool end or the tool comprises manually releasable locking means (7; 6, 7) arranged for longitudinally and rotationally locking the tool (13) and the tool end.

19. System according to claim 18 or according to claim 18 and one or more of the preceding claims, **characterised in that** said means are spring-loaded manually releasable locking means (7; 6, 7).

20. System according to claim 19, **characterised in that** the means (7; 6, 7) comprise a spring, which is either internally (15), or externally (9b) provided with respect to the arbor (12).

21. System according to one of the claims 18-20, **characterised in that** the tool (13) is provided with a hole arranged as a form closure with the tool end.

22. System according to one of the claims 18-21, **characterised in that** the tool (13) and the tool end are capable of being shifted with respect to one another, between a working position (fig. 2A) wherein the tool and the tool end are locked, and a sliding/ejecting position (fig. 2B) wherein a plug of sawn material is pushed out of a hole-saw tool (13) by the tool end in a linear manner, either by means of the tool end or by means of a rejuvenated drill.

23. A tool in particular a material removing tool, such as for example a hole-saw (13) for use in the tool-change system according to one of the claims 18-22, **characterised in that** the tool is arranged to be locked longitudinally and rotationally to manually releasable locking means (7; 6, 7).

24. An arbor (12) having a rotatably drivable end (11) and a tool end , **characterised in that** the tool end comprises manually releasable locking means (7) arranged for longitudinally and rotationally locking the tool end to a tool.

25. The combination of a tool and an adapter to be mounted to the tool, **characterised in that** the adapter is arranged to be locked longitudinally and rotationally to manually releasable locking means (7; 6, 7).